TB 11-333-1

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

EMERGENCY SWITCHBOARD SB-18/GT AND ADAPTER PLUG U-4/GT

Ref: TM 11-333

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1. GENERAL. This technical bulletin covers the operation and use of Emergency Switchboard SB-18/GT and Adapter Plug U-4/GT. These equipments are used as very light, highly mobile emergency switching centers for local battery telephones. If Telephone EE-8-( ) is used as an operator's telephone, the SB-18/GT may be used as an emergency field replacement for a magneto switchboard. The small space and weight and the moistureproof characteristics of the equipment make it ideal for use in jungle, mountain, amphibious, and airborne operations. Adapter Plug U-4/GT (a component of Emergency Switchboard SB-18/GT) also may be used to substitute a silent visual signal for the audible signal provided in the ringer of Telephone EE-8-( ). The EE-8-( ) can operate the signal in Adapter Plug U-4/GT over distances up to 20 miles.

2. DESCRIPTION OF EQUIPMENTS. a. Emergency Switchboard SB-18/GT. Emergency Switchboard SB-18/GT (fig. 1) consists of Case CY-229/GT, Plug Holder MT-313/GT, and seven Adapter Plugs U-4/GT. The total weight of the complete unit is approximately 2 1/4 pounds.

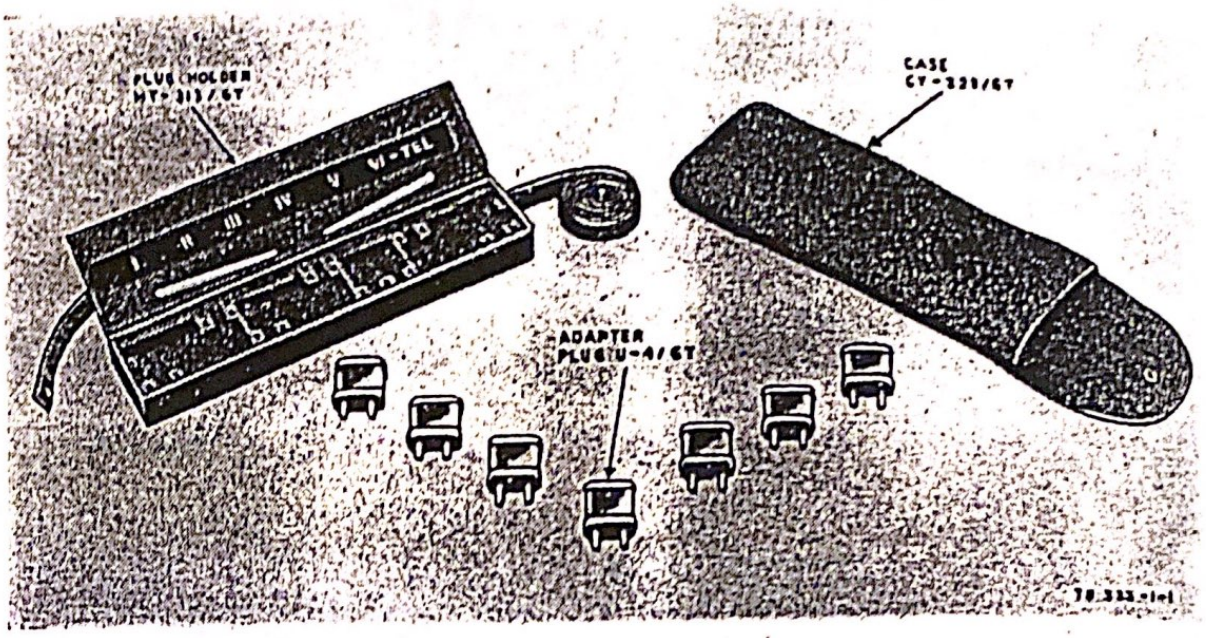

Figure 1. Emergency Switchboard SB-18/GT.

(1) Case CY-229/GT (fig. 2). Case CY-229/GT is used to carry Plug Holder MT-313/GT. It is made of olive-drab canvas and is approximately 12 inches long by 4 inches wide by 1 1/2 inches thick. The case is provided with a flap held closed by a snap fastener. The back of the case has two canvas loops and a metal hook for attachment to a cartridge or pistol belt.

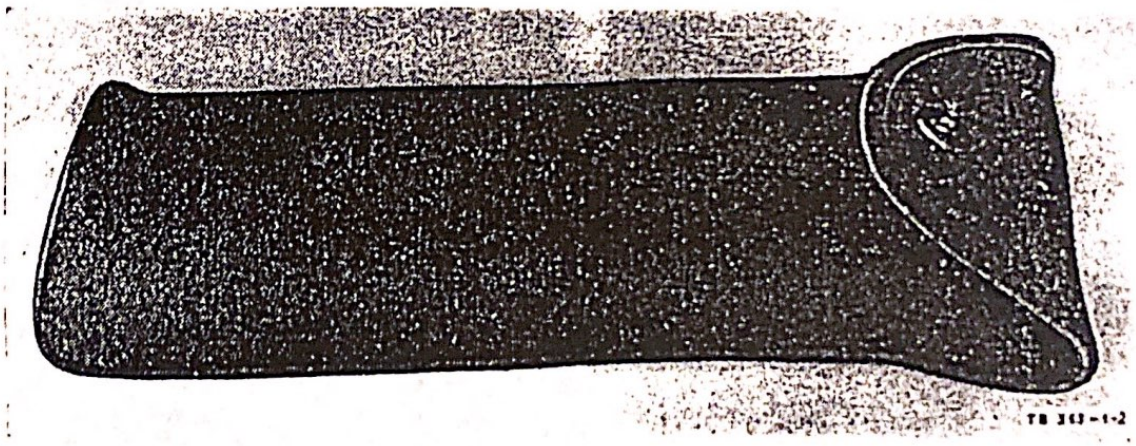

Figure 2. Case CY-229/GT.

(2) Plug holder MT-313/GT (fig. 3).

(a) Plug Holder MT-313/GT is used for mounting and carrying seven Adapter Plugs U-4/GT. It contains no wiring and is used as a convenient operating surface for the adapter plugs. The unit is provided with a hinged cover and is approximately 12 inches long by 3 inches wide by 1 1/4 inches thick.

(b) The bottom of the case contains seven sponge-rubberlined compartments which are used to store the adapter plugs during transit. There are seven jacks in the plug holder, four to the front and three to the rear, which are used to mount the adapter plugs during operation.

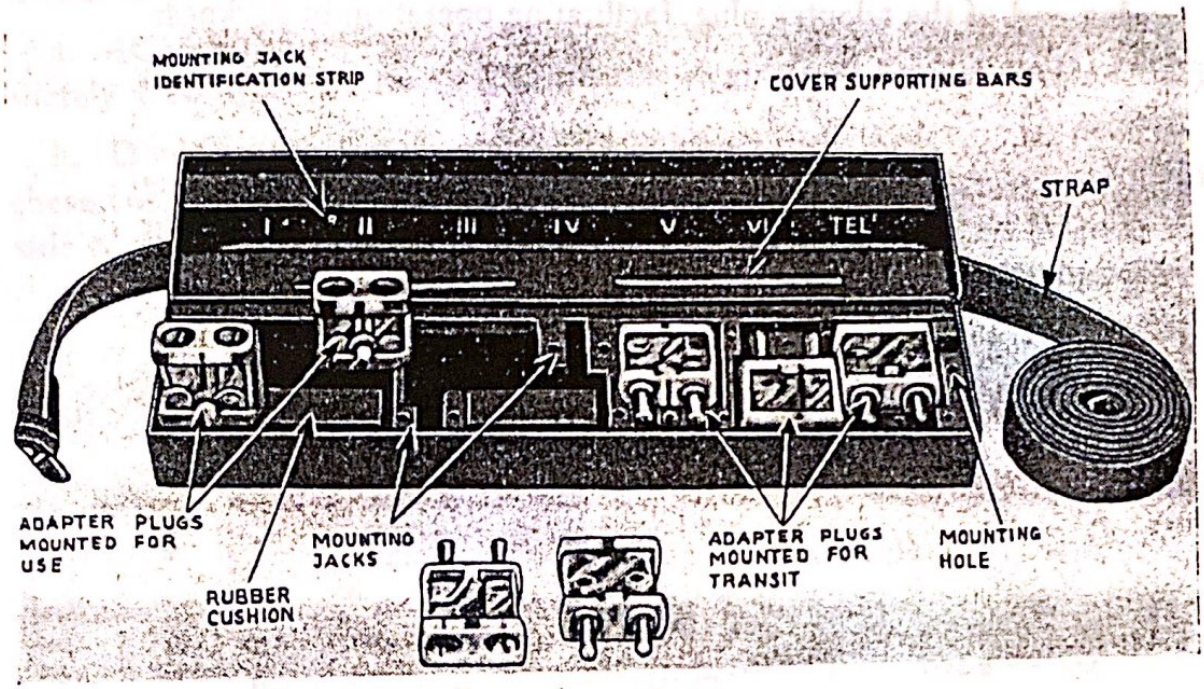

Figure 3. Plug Holder MT-313/GT.

(c) The cover is provided with an identification strip printed with luminous numbers to facilitate operations in darkness. An 82-inch strap threaded through two guides welded to the cover provides a means of fastening the holder to a support and, also, serves to keep the unit closed when it is not in use. Two metal bars on the inside of the cover hold the cover in the open position.

b. Adapter Plug U-4/GT (fig. 4). Adapter Plug U-4/GT is a jack-plug combination mounted in a transparent plastic body. A 50,000-ohm resistor and a .1-watt neon lamp are wired in series across the plug-jack combination and placed within the body. The minimum signaling voltage for the adapter plug is 65 volts alternating current.

(1) The plug end of the plug-jack combination is used to hold securely the line wires which are inserted through the two bossed holes (fig. 4); the extended plug ends serve as thumbscrews to hold the line wires securely. The plug-jack combinations are arranged to permit connection of the adapters in

parallel. The mount for the neon lamp is recessed in the center of the body, and the lamp, when lighted, can be seen through the transparent body.

(2) Embedded below an etched surface of the plug is a luminous identification strip of a white plastic material over which identification numbers may be written. A luminous dot indicates the plug end of the adapter plug, facilitating operation in darkness.

(3) The jack end of the plug is directly above the identification strip.

(4) The dimensions of Adapter Plug U-4/GT are 2 inches long over-all by 1 1/2 inches wide by 5/8 inch thick. The plug weighs approximately 1 1/2 ounces.

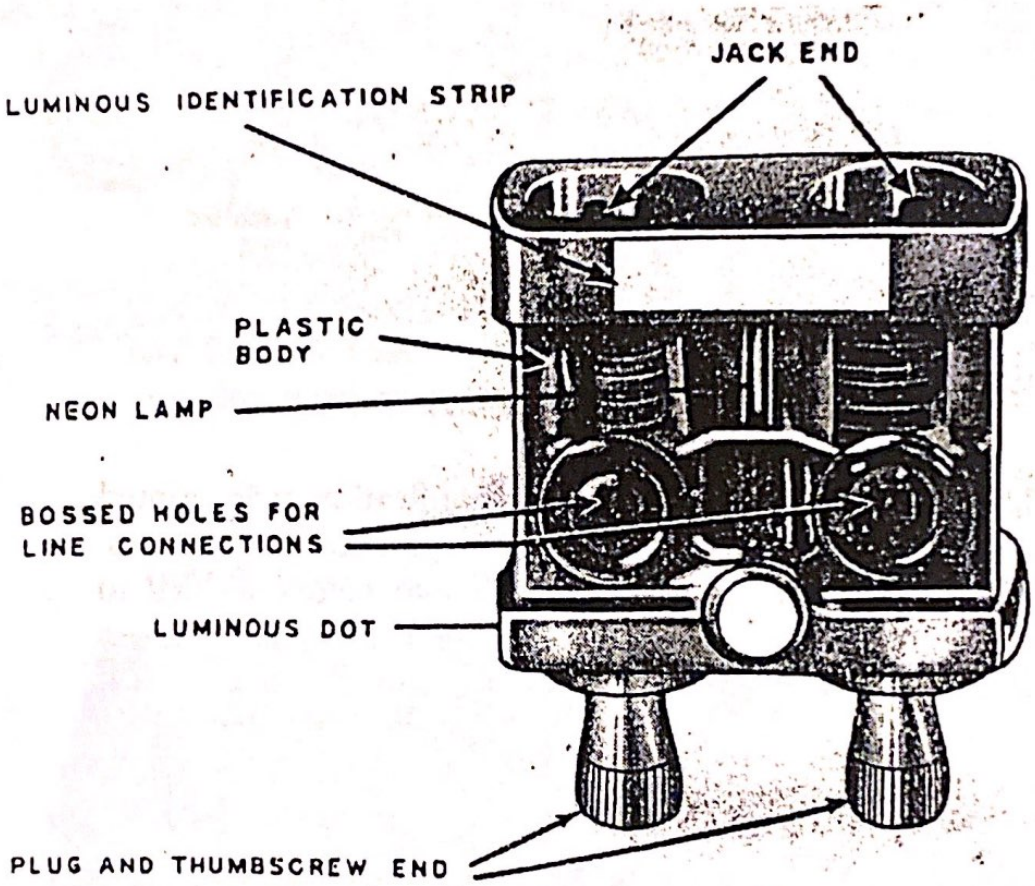

Figure 4. Adapter Plug U-4/GT.

3. UNPACKING EQUIPMENT. Emergency Switchboard SB-18/GT, when packed for export, is inclosed in a moisture-vaporproof barrier and is packed in a fiberboard case. Several of the packaged units are packed in a nailed wooden shipping container. See TM 11-333, paragraph 11, for detailed instructions for uncrating and unpacking wooden shipping containers. To remove Emergency Switchboard

SB-18/GT from the fiberboard case, open the ends and slide out the wrapped unit. Carefully cut the moisture-vaporproof barrier so that the canvas case will not be damaged. Remove the plug holder from the canvas case and clean the plugs and plug holder.

4. TESTING EQUIPMENT. To test the adapter plugs, cut off a 4-foot length of field wire.

a. At a point 6 inches from the ends of the wire, remove approximately 1 1/4 inches of insulation.

b. Double over and flatten the skinned ends of the wire. Insert these ends into the bossed holes of the adapter plug (fig. 7). Use the side of the adapter which has the luminous dot.

c. Tighten the thumbscrew plug ends to secure the wire ends.

d. Connect the other ends of the wire to the L1 and L2 winding posts of Telephone EE-8-( ).

e. Insert the adapter plug into another adapter plug. Apply ringing current by turning the generator crank several times. The neon lamp in the adapter undergoing test should light, and it should remain lighted as long as the ringing current is applied.

f. If the lamp fails to light, discard the adapter plug immediately.

g. Repeat this procedure for all of the adapter plugs.

h. If all of the adapter plugs test as defective, remove the wires from the plug (b above), wire another adapter plug, and retest the other plugs.

5. CONNECTIONS. After testing all of the adapter plugs, secure the cover in the open position by means of the supporting bars (fig. 3). Strap the plug holder and Telephone EE-8-( ), which is to be used as the operator's telephone, to any object which will afford easy and comfortable operation of the switchboard. Figure 5 shows a typical field installation of the switchboard and telephone. Be certain that the equipment is mounted so that it will not get wet. Moisture will short the plug and jack combinations.

Caution: Do not allow the entire weight of the switchboard to be supported by the cover when fastening the switchboard to an object.

a. Prepare and connect wires from the field telephones to be served to adapter plugs (par. 4a, b, and c). Be certain that the wires are on the luminous side of the adapter.

b. Allow sufficient slack to form a drip loop and to allow free movement of the adapter.

c. Mark each adapter with Roman numerals to correspond with the marking on Plug Holder MT-313/GT. Use a soft black pencil, if available.

d. Place each adapter in the mounting jack (fig. 3) corresponding to the number on the adapter. Place the operator's adapter in the TEL jack. Be certain to keep the luminous side of the adapter toward the operator.

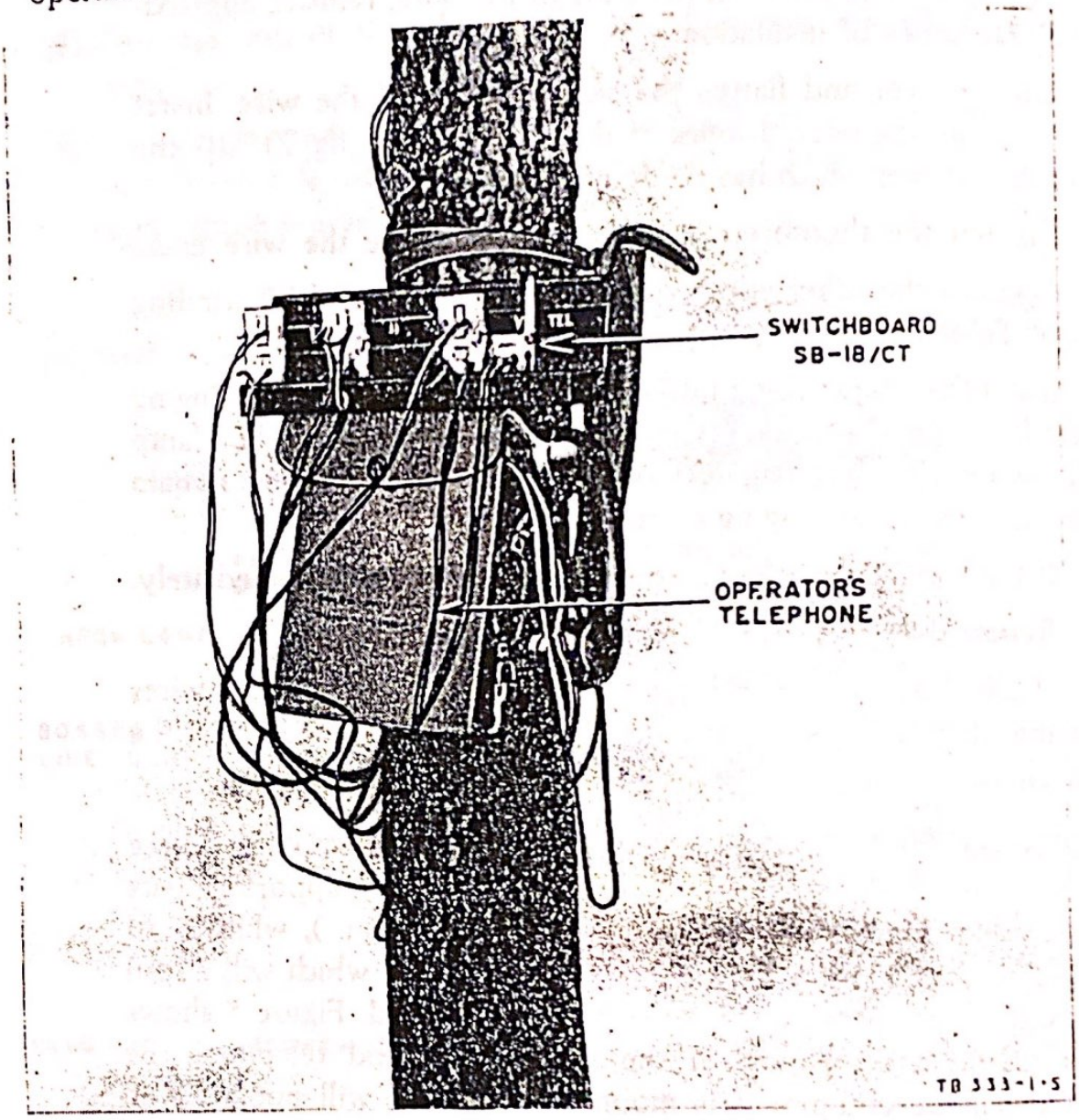

Figure 5. Typical field installation of Emergency Switchboard SB-18/GT and Telephone EE-8-( ).

6. CONNECTION FOR SILENT VISUAL SIGNAL FOR TELEPHONE EE-8-( ) (fig. 6). To substitute a silent-visual signal for the ringer in Telephone EE-8-( ), disconnect the ringer and connect the adapter plug across terminals L1 and L2 of the telephone. See TM 11-333, paragraph 22c, for the procedure to be followed to disconnect the ringer. The adapter plug may be connected in either of the following ways:

a. Remove 1 1/2 inches of insulation at a point 1 foot ore more from the end of each line wire. Double over the skinned sections and connect the line to terminals L1 and L2 of the telephone. Remove 1 1/4 inches of insulation approximately 6 inches from the same ends of the line wires. Double over the skinned sections and insert them into the bossed holes in the adapter plug. Tighten the thumbscrew.

b. Connect the line wires directly to terminals L1 and L2 of the telephone. Attach the adapter plug to a separate length of two-conductor wire 1 foot or more in length. Connect the free ends of the wires from the adapter plug to terminals L1 and L2.

7. OPERATION UNDER USUAL CONDITIONS (fig. 7). a. Line-to-line Connection.

(1) When the neon lamp flashes in the adapter plug of a calling telephone, insert the operator's adapter plug into the jack end of the adapter plug of the calling telephone. Use the operator's telephone to answer the calling telephone.

(2) Determine the number to be called and remove the operator's adapter from the jack of the calling telephone. Insert the operator's adapter plug into the jack of the adapter plug of the called telephone.

(3) Use the hand generator on the operator's telephone to ring the called telephone.

(4) When the called telephone answers, insert the adapter plug of the called telephone into the adapter plug of the calling telephone and report the connection ready (fig. 7).

(5) Do not remove the operator's adapter plug until conversation has begun.

(6) To supervise any connection, insert the operator's adapter plug into the adapter of the called telephone.

(7) A re-call or ring-off will be denoted by the neon lamp flashing in both adapters.

b. Conference Connection.

(1) To set up a conference connection, use the operator's adapter plug to call each telephone individually.

(2) Inform the called telephones to stand by for a conference call and connect each adapter in parallel (fig. 7).

(3) After all of the desired telephones are connected, inform the calling telephone that the conference is established.

(4) On a re-call by any telephone in the conference connection, the neon lamps of all of the line plugs connected will flash.

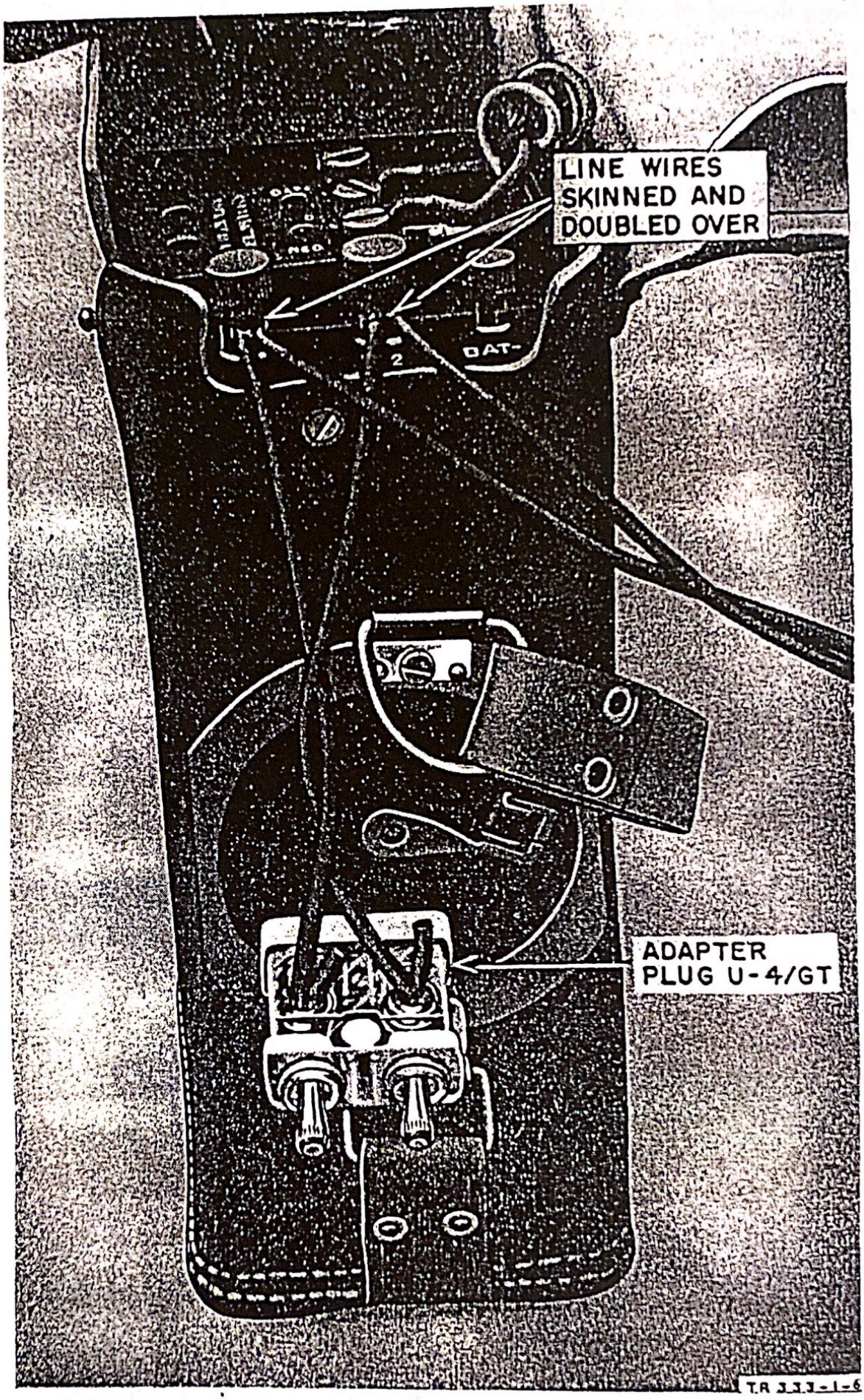

Figure 6. Telephone EE-8-( ) and Adapter Plug U-4/GT, arranged for silent visual signaling.

(5) Supervise the connection on a re-call or ring-off, challenge, and disconnect or change the connection as desired.

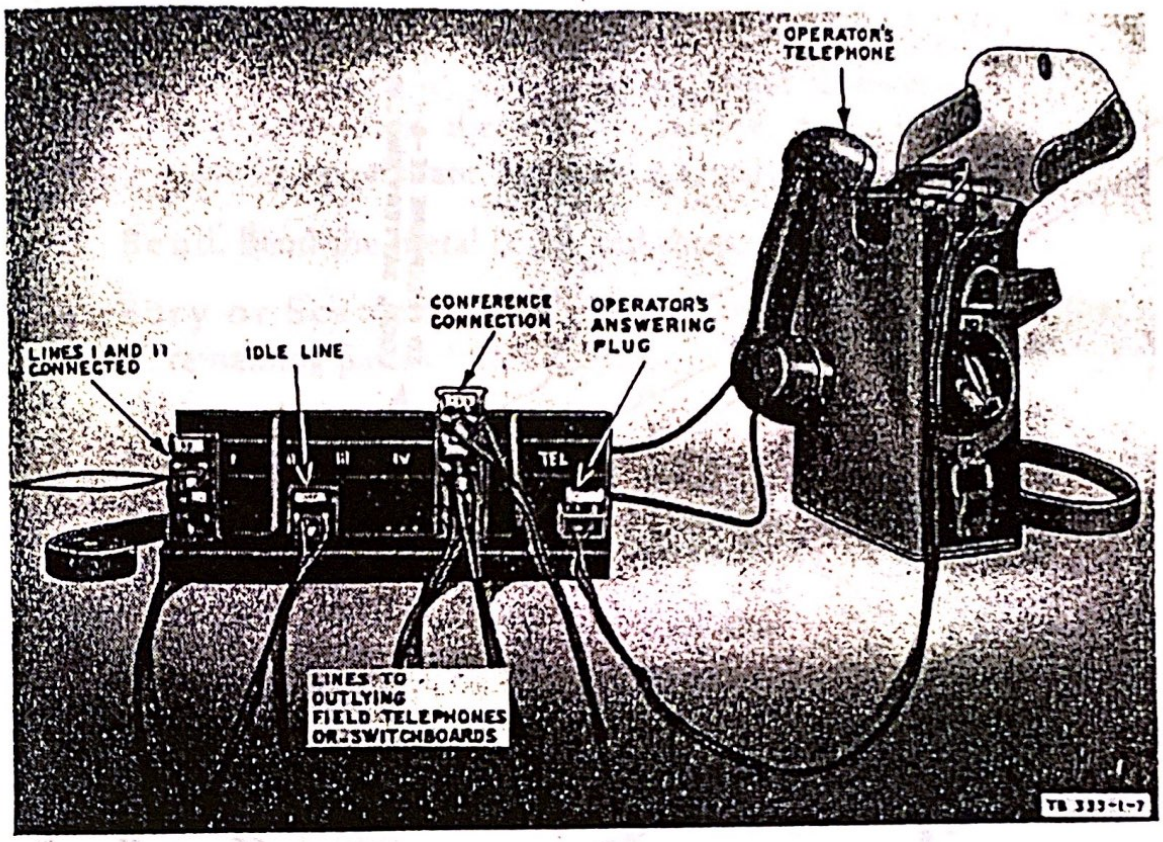

Figure 7. Emergency Switchboard SB-18/GT, in use.

8. OPERATION UNDER UNUSUAL CONDITIONS. If Plug Holder MT-313/GT becomes damaged or is not available, operation may be performed by using only the adapter plugs and the operator's telephone in the following manner:

a. Select a dry, insulated surface and place the adapter plugs and the operator's telephone in a convenient line (fig. 8).

b. Test the adapter plugs (par. 4).

c. Connect the line wires to the adapter plugs in such a manner that the wires enter the plugs on the sides which contain the luminous strips (par. 4a, b, and c).

d. Follow the procedures outlined in paragraph 7 for operating instructions.

9. DEMOLITION OF MATERIAL TO PREVENT ENEMY USE. The demolition procedures outlined in paragraph 10 will be used to prevent the enemy from using or salvaging this equipment. Demolition of the equipment will be accomplished only upon order of the commander.

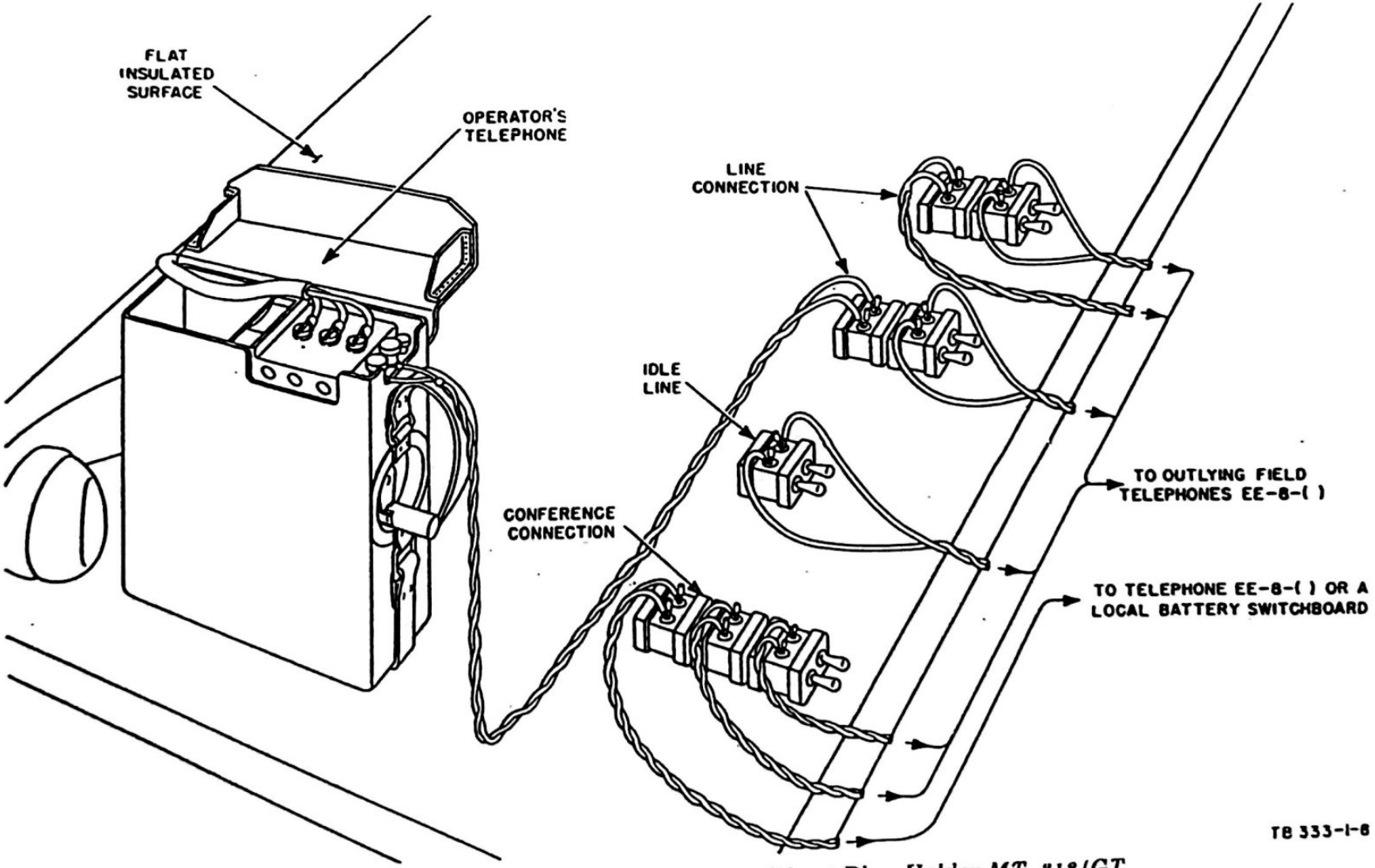

Figure 8. Adapter Plugs U–4/GT, in use without Plug Holder MT–313/GT.

10. METHODS OF DESTRUCTION. a. Smash. Use sledges, axes, handaxes, pickaxes, hammers, crowbars, or heavy tools to smash the plug holder, adapter plugs, telephone, and batteries.

b. Cut. Use axes, handaxes, or machetes to cut the field wire and the carrying cases.

c. Burn. Use gasoline, kerosene, oil, flame throwers, or incendiary grenades to burn the wires, adapters, carrying cases, plug holders, records, papers, and technical manuals.

d. Bend. Bend the metal cover and chassis.

e. Bury or Scatter. Bury in slit trenches, fox holes, or other holes all remaining parts of the equipment. Scatter in streams.

11. IDENTIFICATION TABLE OF PARTS.

Note. The fact that a part is listed in this table is not sufficient basis for requisitioning the item. Requisitions must cite an authorized basis, such as T/O&E, T/A, SIG 7&8, SIG 7-8-10, SIG 10, list of allowances of expendable material, or another authorized supply basis. The Department of the Army Supply Catalogs applicable to the equipment covered in this technical bulletin are SIG 7-SB-18/GT and SIG 8-SB-18/GT. For an index of available supply catalogs in the Signal portion of the Department of the Army Supply Catalog, see the latest issue of SIG 1.

11. IDENTIFICATION TABLE OF PARTS—Continued

Name of part and description	Function of part	Signal Corps stock No.
EMERGENCY SWITCHBOARD SB-18/GT	.....	4C9905-18
ADAPTER, connector: Adapter Plug U-4/GT; 2 round male contacts one end; 2 round female contacts other end.	Used to interconnect telephone lines	4C75-4
CASE, plug holder: Case CY-229/GT; olive-drab canvas duck; weatherproof.	Used for transporting Plug Holder MT-313/GT	4C2874-229
HOLDER, plug: Plug Holder MT-313/GT	Used to support adapter plugs in operating position; protects plugs when not in use.	4C2410-313

[AG 412.42 (19 Sep 51)]

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For explanation of distribution formula, see SR 310-90-1.